

# **MEMPHIS EARLY ACTION COMPACT AREA**

**Fayette  
Shelby  
Tipton**



# Fayette County Government

Rhea Taylor / County Mayor

June 6, 2003

Mr. Barry Stevens  
Tennessee Department of Environment and Conservation  
Division of Pollution Control  
9<sup>th</sup> Floor, L&C Annex  
401 Church Street  
Nashville, TN 37243-1531

Dear Mr. Stevens:

Enclosed, please find a list of Fayette County's recommended strategy options for the State of Tennessee and Memphis Local Areas Early Action Compact. Please include the attached list with your submittal to the Environmental Protection Agency (EPA) of local control measures being considered. I would appreciate receiving a copy of the final June 16<sup>th</sup> submittal to EPA and also the June 23<sup>rd</sup> Initial Progress Report for the Memphis Area Early Action Compact.

If I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

Rhea "Skip" Taylor, Mayor  
Fayette County, Tennessee

2003 JUN 11 PM 1:15

**EARLY ACTION COMPACT  
RECOMMENDED 8-HOUR CONTROL STRATEGY OPTIONS FOR  
FAYETTE COUNTY, TENNESSEE  
MEMPHIS METROPOLITAN STATISTICAL AREA**

1. Low RVP (7.8 psi) gasoline (at refinery)
2. Stage I vapor recovery (at fueling stations)
3. Electric or propane-fueled forklifts
4. Ozone Alert program: Drive 55
5. Gas cap for vehicles giveaway
6. Lower speed limit from 70 to 55 mph for heavy duty (18 wheel) trucks during ozone season and increased enforcement
7. Intelligent Transportation System (electronic signs on roadway provide real time info to drivers)
8. Use TDOT "enhancements" grants to link greenways/bikeways/bike racks/pedestrian walkways
9. Adopt open burning restrictions during peak ozone periods
10. Provide the public with information through education programs and community events
11. Develop an air quality web page to provide the public with information
12. Encourage the use of catalyst and low sulfur diesel
13. Encourage car pooling and the use of area wide ride share incentives



CITY OF MEMPHIS  
AND  
SHELBY COUNTY, TENNESSEE



WILLIE W. HERENTON  
City of Memphis Mayor

A C WHARTON, JR.  
Shelby County Mayor

June 6, 2003

Barry R. Stephens, P.E.  
Technical Secretary  
Tennessee Air Pollution Control Board  
9<sup>th</sup> Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531

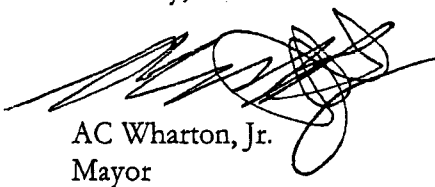
SUBJECT: Memphis Metropolitan Statistical Area  
Early Action Compact  
June 16<sup>th</sup> List of Control Measures Under Consideration

Dear Mr. Stephens:

In accordance with the Early Action Compact entered into by Memphis and Shelby County in December, 2002, the attached list is hereby submitted. The West Memphis, Arkansas Metropolitan Planning Organization has submitted a list of recommended strategy options for possible implementation in Crittenden County, Arkansas. DeSoto County, Mississippi will also submit a list. It is our understanding that you will present the lists to the Tennessee Air Pollution Control Board at its June 11<sup>th</sup> meeting and forward them to U.S. EPA Region IV by the June 16<sup>th</sup> milestone deadline in the Early Action Compact.

We will continue to participate in the stakeholder process to develop an area wide plan. I certify that I have the necessary authority to submit this list.

Sincerely,



AC Wharton, Jr.  
Mayor



Dr. Willie W. Herenton  
Mayor

Cc: Yvonne Madlock, Director, Memphis & Shelby County Health Department  
John Fowlkes, CAO, Shelby County  
Keith L. McGee, Interim CAO, City of Memphis  
Diane Arnst, Pollution Control, Memphis & Shelby County Health Department  
Carter Gray, MPO  
Kay Prince, U.S. EPA Region IV

MEMPHIS & SHELBY COUNTY COMPONENT OF  
LIST OF CONTROL MEASURES BEING CONSIDERED  
FOR EARLY ACTION COMPACT FOR  
MEMPHIS METROPOLITAN STATISTICAL AREA

SEPARATE LISTS TO BE SUBMITTED BY  
DESOTO COUNTY, MISSISSIPPI; CRITTENDEN COUNTY, ARKANSAS;  
FAYETTE COUNTY and TIPTON COUNTY, TENNESSEE  
June 16, 2003

**FUEL STRATEGIES**

1. Will work with Premcor Refining Group, Inc. and other suppliers and with the MSA counties outside of Shelby County to determine if Low Reid Vapor Pressure (7.8 psi) gasoline supply can be expanded to Crittenden, DeSoto, Tipton and Fayette Counties during ozone season [already required within Shelby County]  
Status: Meeting with Premcor Refining Group, Inc. scheduled June 9<sup>th</sup>; Lion Oil spokesman (Arkansas) stated 5/14 that it could not supply this fuel in this timeframe
2. Stage I Vapor Recovery expanded beyond Shelby County at fueling stations [already required within Shelby County]  
Status: Would require ordinances; may require statutory changes; would require infrastructure changes; probably could be implemented by 2005.. Cost approximately \$400 per tank
3. Low Sulfur Gasoline to Memphis MSA by May 1, 2005  
Status: Meeting with Premcor Refining Group, Inc. scheduled June 9<sup>th</sup> to discuss
4. Stage II Vapor Recovery at fueling stations  
Status: Cost approximately \$1,200/TON of VOCs reduced. Also reduces hazardous air pollutant emissions from fuels. May be viewed as duplicative of onboard canisters on newer model cars
5. Cetane Additive at diesel terminal distribution point  
Status: Cost approximately \$4,00/TON of NOx reduced; determination of credit to local area issue; infrastructure needed for fuel mixing; pilot program summer 2004 in East Tennessee
6. BioDiesel (plant oil added at diesel terminal distribution point)  
Status: Adds NOx but reduces VOCs; determination of credit to local area issue; infrastructure needed for fuel mixing; may add \$ 0.30 to \$2.00 per gallon to consumer
7. Federal Reformulated Gas Opt-In  
Status: Governor must apply under Clean Air Act Section 211(k)(6) for classified nonattainment area; unclear if available to deferred Early Action Compact areas; may be more effective for carbon monoxide reduction strategy than for ozone reduction; Premcor Refining Group, Inc. spokesman stated 5/14 that this would be the toughest fuel to supply locally
8. BioDiesel and fuelborne catalyst (plant oil and catalyst added at diesel terminal distribution point)  
Status: Determination of credit to local area issue; infrastructure needed for fuel mixing
9. Diesel Fuel Emulsions (water based fuel additive at diesel terminal distribution point)

Status: Reduces horsepower and fuel economy so industry resistance is expected to be high; determination of credit to local area issue; infrastructure needed for fuel mixing; may add \$0.35 to \$3.00 per gallon

NOTE: Mandatory local fuel strategies require an EPA Fuel Waiver under Clean Air Act Section 211(c)(4)(B). EPA can grant waiver only "if no other measures that would bring about timely attainment exit, or if other measures exist and are technically possible to implement but are unreasonable or impracticable." Time to obtain Fuel Waiver is lengthy. Voluntary local fuel strategies do not need waiver, but only 7% of target reductions could be voluntary for the Early Action Compact.

## STATIONARY SOURCE STRATEGIES

1. Fogging at 4 large and 16 small Combustion Turbines at TVA Allen Steam Plant. Reduces NOx emissions by about 10% when Combustion Turbines are in use, ambient temperature is over 70 degrees Fahrenheit, and humidity is 80% or less  
Status: Fogging devices have been installed beginning 1998 and ending 2002 on all 20 Combustion Turbines and are now in use when Combustion Turbines are in use, per *TVA Allen Steam Plant* spokesmen 5/30. TVA to provide data to quantify NOx emissions reductions for credit and for attainment modeling purposes. TVA to provide cost per ton of emissions reduction figures.
2. Wet injection at Combustion Turbines at TVA Allen Steam Plant to reduce NOx by about 40% to about 60 ppm  
Status: Memphis & Shelby County Health Department obtaining permission of Arkansas-Tennessee-Mississippi Ozone Study Operations Committee for contractor SAI, Inc. to release data to Larry Gautney of TVA to model emissions impacts before *TVA Allen Steam Plant* commits to this strategy. Modeling results expected about July 15<sup>th</sup> if data is provided to TVA first week of June. TVA to provide cost per ton of emissions reduction figures.
3. Operate Selective Catalytic Reduction equipment for three EGUs covered by NOx SIP call on specified days in April and October each year IF Pollution Control Section forecasts an ozone exceedance for the next day OR if Pollution Control Section observes at 8 AM that overnight ozone levels remained high. Forecaster to advise Technical Manager and PAS-Executive, who telephone TVA [Ozone Action Plan approach]  
Status: Spokesmen for *TVA Allen Steam Plant* agreed 5/30 to model this strategy before it commits to this strategy. SCR can be in operation within 2 or 3 hours after notification to TVA; cost per day is about \$10,000; TVA to provide cost per ton of emissions reduction figures. Health Department reviewed historical data to determine typical date of 4<sup>th</sup> highest 8-hour ozone value each ozone season and provided to TVA on 6/2.
4. Will work with the MSA counties outside of Shelby County on early implementation of NOx Reasonably Available Control Technology (RACT) in MSA  
Status: Ordinance revisions needed for this longterm strategy for new/replacement sources of NOx; effective for Early Action Compact 2007 deadline if a retrofit requirement and effective for maintenance through 2012.
5. DriveMax programmable computer installed on diesel engines for tub grinders at mulching operations to reduce NOx

- Status: Need to inventory mulching operations to determine number of engines and quantify possible reductions
- 6. Electric or propane-fueled forklifts  
Status: *Memphis Light, Gas & Water* has seven (7) electric forklifts and sixteen (16) diesel forklifts. Need to inventory MSA to determine number, useful life, and to quantify possible NOx reductions
- 7. Compressor station diesel engines at natural gas pipelines SIC Code 4922 or 4923  
Status: *Texas Gas Transmission, LLC* on 6/2/03 orally committed to **Memphis & Shelby County Health Department** to complete a programming change on computers that operate eight (8) reciprocating compressors to operate at 90% of rated load no later than start of ozone season 2004 at its Covington facility in Tipton County TN to reduce average annual ozone season NOx reductions by 149 TONS and to achieve similar further NOx reductions of 83 TPY elsewhere in the MSA, which would achieve NOx emissions reductions of approximately 235 TONS Per Year (1.09 TONS Per DAY) from April 1<sup>st</sup> through October 31<sup>st</sup>. Darrell Morgan of Texas Gas Transmission, LLC submitted written calculations to the Health Department. The Health Department will work with the Tennessee Department of Environment and Conservation on any related permitting issues. .

On May 23, 2003, EPA received a notice of intent to sue from the Georgia Sierra Club for EPA's failure to promulgate the NOx SIP Phase II rule, according to Kay Prince, EPA Region IV. This rule would achieve 82% to 90% reduction in NOx from natural gas transmission pipeline compressor engines in the twenty-two (22) NOx SIP Call states, which include Tennessee but not Mississippi. First year in which emissions reductions would occur is unknown. Tennessee Department of Environment and Conservation is reviewing its emission inventory for this source category and may consider a statewide control strategy in the interim if tens of thousands of NOx emissions are attributable from this source category as anticipated..

## VOLUNTARY MEASURES

1. Ozone Alert Program: Drive 55  
Status: Need to work on publicity and tie in ozone forecasts and with Intelligent Transportation System
2. Gas cap for vehicles giveaway  
Status: Need to approach Autozone to flesh out this idea. Could tie in with I/M inspection stations or Clean Air Month event at start of ozone season

## FLEET STRATEGIES

1. Fleet ULEV or SULEV Program (Buses, taxi, private, utility, airport ground)  
Status: *Federal Express* announced 5/23 phase-in of a hybrid diesel/electric E700 truck (medium delivery truck size) into its fleet of 30,00 nationwide. First phase is 20 trucks in 4 cities; Memphis is being considered. Truck manufacturer Eaton states E700 trucks are 45% more fuel-efficient and emit 75% less smog-forming gases and

90% fewer particulates. Cost is 10% to 20% more than conventional diesel, offset by lower fuel costs. Trucks are replaced every 10-12 years. Congressional tax credits are pending. Regenerative braking and a particulate trap are the controls. Timing for conversion of entire Memphis fleet will not coincide with 2007 deadline, but is an effective longterm strategy for 2012 maintenance. *Memphis Light Gas & Water* (MLGW) has one (1) hybrid electric car, 900 light-duty diesel onroad vehicles, 370 heavy duty diesel vehicles, and 684 offroad diesel vehicles. MLGW has begun to purchase cleaner half-ton trucks with a specified number to be purchased per year, VMT/year/truck]

## VEHICLE INSPECTION AND MAINTENANCE (I/M) STRATEGIES

1. Basic I/M, measuring hydrocarbons and carbon monoxide from tailpipe exhaust only; plus gas cap check of evaporative emission control system  
Status: Need to examine cost of adding gas cap check at existing stations; need to estimate cost/ton of reduced emissions; significant resistance expected to expanding throughout MSA; funding problems expected
2. I/M tailpipe test and ASM/IM240 while vehicle is driven on a treadmill-like device (a dynamometer) over a driving cycle with many different speeds resembling typical city driving; measures hydrocarbon, carbon monoxide and nitrogen oxides emissions from entire exhaust stream; also measures fuel economy and generates diagnostic information targeting repairs needed  
Status: Need to examine cost of adding ASM/IM240 at existing stations; need to estimate cost/ton of reduced emissions; significant resistance expected to expanding throughout MSA; funding problems expected
3. ASM/IM240 test plus gas cap check with 5% waiver rate  
Status: Need to examine cost of adding ASM/IM240 at existing stations; need to estimate cost/ton of reduced emissions; significant resistance expected to expanding throughout MSA; funding problems expected
4. Onboard Diagnostics II: test of 1996 and newer model year vehicle OBD computer systems for proper functioning in addition to tailpipe test for these model years.  
Status: Statutory ordinance changes may be required to authorize use of "hand scanner" equipment inside automobile or inside engine hood of privately owned automobiles. Cost to add "hand scanners to the three existing I/M stations [10 lanes, 2 mobile units, and 5 spare units] estimated at \$60,000 plus subsequent software upgrades.
5. Remote Sensing outside City of Memphis limits  
Status: Need to determine cost and number of devices required to have an effective program; quantification of emissions reductions issue; privacy issue

## ENERGY EFFICIENCY STRATEGIES

1. Memphis Light, Gas & Water Energy Audits of residential buildings "Energy Doctor Program"  
Status: MLGW is gathering data concerning the number of residences per year audited and resulting emissions reductions per house
2. Memphis Light, Gas & Water Energy Audits of commercial buildings

Status: MLGW is gathering information about start date of this new program and expected emissions reductions

3. Adopt International Energy Conservation Code and energy efficiency chapter of International Residential Code into Local Building Codes

Status: Longterm strategy to maintain to 2012; ordinance revisions necessary; need to obtain copy of it and solicit public comments; dovetails with Smart Growth

## **TRAVEL BEHAVIOR STRATEGIES**

1. Lower Speed Limit from 70 to 55 mph for Heavy Duty (18-Wheel) Trucks during Ozone Season and increase enforcement

Status: Representatives of Tennessee Department of Environment and Conservation began meeting in May with Tennessee Department of Transportation officials to discuss Early Action Compact strategies; safety benefits; TDOT increased speed limit in 2003 to 65 mph for all traffic on I-240; possible resistance from trucking industry; unclear if TDOT can accomplish or if State legislature must act; may need additional funding for additional enforcement

2. Intelligent Transportation System (electronic signs on roadway provide real time information to drivers that reduces congestion)

Status: Already funded for completion by 2006; determination of emission reduction credit issue

3. Use TDOT "enhancements" grants to link greenways/bikeways/bike racks/pedestrian walkways

Status: Dovetails with Smart Growth; MPO ranking during grant cycle; current 3-year Transportation Improvement Plan timeframe; quantification of emissions reduction issue

## **MOTOR VEHICLE STRATEGIES**

1. NOx flash (recalibrate diesel engine fleets to lowest NOx emission rate)

Status: Need to quantify for Memphis Federal Express fleet where this was completed to claim credit; approximately \$1,000 cost/ton reduced

2. Diesel Retrofit of On-Road vehicles with catalytic converters after low sulfur diesel fuel is available

Status: Low sulfur diesel fuel availability federal deadline is 1/1/06; retrofit is eligible for federal Congestion Mitigation and Air Quality (CMAQ) Improvement funds and for federal Toyota Settlement funds; cost estimated at \$4,000 to \$12,000/Ton of NOx reduced

3. Diesel Retrofit of Off-Road vehicles with catalytic converters after low sulfur diesel fuel is available

Status: Low sulfur diesel fuel availability federal deadline is 1/1/06; retrofit is eligible for federal Congestion Mitigation and Air Quality (CMAQ) Improvement funds and for federal Toyota Settlement funds; cost estimated at \$4,000 to \$12,000/Ton of NOx reduced

4. Local government contract preference for bidders with retrofitted diesel engines

Status: Need to pursue after 1/1/06 availability of low sulfur diesel fuel; emission reduction quantification issue

5. Install DriverMax programmable computers on buses

Status: Already installed on MATA Paratransit buses; need to quantify for NOx reduction credit; consider for larger buses during MATA budget cycle; may be eligible for CMAQ funding

6. Liquified Natural Gas for Railroad Switch Engines

Status: Need to inventory to determine number, useful life, and to quantify possible NOx reductions

7. Truck idling emissions reduction through truckstop electrification

Status: Pilot at one truckstop in West Memphis, AR by private sector; strategy may also be useful for fleets garaged in Memphis MSA; CMAQ project underway in Knoxville (Supplier: Idleair, Inc.) to install at 100 parking spaces for \$1 million; operating expense subsidy to truck driver for per night charge up to 3 years is also eligible for CMAQ funding; estimated \$1,660 /Ton of NOx reduced

## **EMPLOYER-BASED STRATEGIES**

1. Pay taxable cash compensation in lieu of non-taxable parking benefit of up to \$175/month pursuant to Section 132 of IRS Code, Section 1072 of Taxpayer Relief Act of 1997

Status: Need to track by employer; quantification of emission reductions issue

2. Provide employee Transit Passes of up to \$65/month Tax Free De Minimis Fringe Benefit pursuant to Section 132 of IRS Code

Status: Need to track by employer; quantification of emission reductions issue

3. Provide a Commuter Highway Vehicle for employees pursuant to Section 132 of IRS Code

Status: Need to track by employer; quantification of emission reductions issue

4. Flexible work hours and telecommuting

Status: Need to track by employer; quantification of emission reductions issue

## TIPTON COUNTY

JEFF HUFFMAN  
COUNTY EXECUTIVE  
PHONE (901) 476-0200  
FAX: (901) 476-0227



June 11, 2003

Mr. Barry Stevens  
Tennessee Department of Environment and Conservation  
Division of Pollution Control  
9<sup>th</sup> Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531

Dear Mr. Stevens:

Enclosed, please find a list of Tipton County's recommended strategy options for the State of Tennessee and Memphis Local Area Early Action Compact. Please include the attached list with your submittal to the Environmental Protection Agency (EPA) of local control measures being considered. I would appreciate receiving a copy of the final June 16<sup>th</sup> submittal to EPA and also the June 23<sup>rd</sup> Initial Progress Report for the Memphis Area Early Action Compact.

If I can be of any further assistance, please do not hesitate to contact me.

Respectfully submitted,

Jeff Huffman  
Tipton County Executive

EARLY ACTION COMPACT  
RECOMMENDED 8-HOUR CONTROL STRATEGY OPTIONS FOR  
TIPTON COUNTY, TENNESSEE  
MEMPHIS METROPOLITAN STATISTICAL ARES

1. Low RVP(7.8 psi) gasoline (at refinery)
2. Stage I vapor recovery (at fueling stations)
3. Electric or propane-fueled forklifts
4. Ozone Alert program: Drive 55
5. Gas cap for vehicles giveaway
6. Lower speed limit from 70 to 55 mph for heavy duty (18 wheel) trucks during ozone season and increased enforcement
7. Intelligent Transportation System (electronic signs on roadway provide real time info to drivers)
8. Use TDOT "enhancements" grants to line greenways/bikeways/bike racks/pedestrian walkways
9. Adopt open burning restrictions during peak ozone periods
10. Provide the public with information through education programs and community events
11. Develop an air quality web page to provide the public with information
12. Encourage the use of catalyst and low sulfur diesel
13. Encourage car pooling and the use of area wide ride share incentives



**METROPOLITAN PLANNING ORGANIZATION**

796 WEST BROADWAY WEST MEMPHIS, AR. 72301  
TELEPHONE 870-735-8148 FAX 870-735-8158

June 13, 2003

2003 JUN 16 PM 1:32

Environmental Protection Agency Region IV via fax 404-562-9019  
Environmental Protection Agency Region VI via fax 214-665-7263

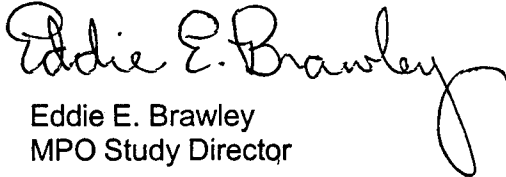
Gentlemen:

Please find attached a signed copy of the May 19<sup>th</sup> letter sent to Mr. Barry Stephens along with the Crittenden County Air Quality Committee's recommended EAC strategy options.

I have been authorized by Crittenden County Judge Melton Holt, West Memphis Mayor William H. Johnson, and Marion Mayor Frank Fogelman as the EAC signatories to submit this list of local control measures.

If there are any questions or if I may be of any other service please let me know.

Sincerely yours,

A handwritten signature in black ink that reads 'Eddie E. Brawley'. The signature is written in a cursive style with a large, flowing 'E' and 'B'.

Eddie E. Brawley  
MPO Study Director

c: Judge Melton Holt  
Mayor William H. Johnson  
Mayor Frank Fogelman  
Mr. Tony Davis  
Mr. Barry Stephens  
Mr. Quincy Styke, III



METROPOLITAN PLANNING ORGANIZATION

796 WEST BROADWAY WEST MEMPHIS, AR. 72301

TELEPHONE 870-735-8148 FAX 870-735-8158

May 19, 2003

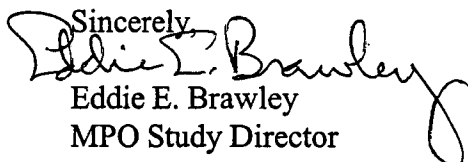
Mr. Barry Stephens via email  
Tennessee Department of Environment and Conservation  
Division of Air Pollution Control  
9<sup>th</sup> Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1531

Dear Mr. Stephens:

As per my handout at the May 14<sup>th</sup>, Early Action Compact meeting, enclosed is another copy of the Crittenden County Air Quality Committee's recommended strategy options for Crittenden County. This is our list to be included for submittal to EPA for the June 16<sup>th</sup> deadline of local control measures being considered. We would appreciate receiving a copy of the final June 16<sup>th</sup> submittal to EPA and also the June 23<sup>rd</sup> Initial Progress Report for the Memphis Area EAC.

If there are any questions relating to this matter or if we may be of any other assistance, please let us know.

Sincerely,

A handwritten signature in black ink, reading 'Eddie E. Brawley'. The signature is written in a cursive style with a large, looping 'E' and a long, sweeping 'y'.

Eddie E. Brawley  
MPO Study Director

c: Ms. Diane Arnst, Shelby County  
Mr. Jim McDougal, Desoto County  
Mr. Dwight Wylie, MDEQ  
Ms. Becky Keogh, ADEQ

*EARLY ACTION COMPACT*

*RECOMMENDED 8-HOUR CONTROL STRATEGY OPTIONS FOR CRITTENDEN COUNTY*

*MEMPHIS METROPOLITAN STATICAL AREA*

*CRITTENDEN COUNTY AIR QUALITY COMMITTEE*

*May 7, 2003*

1. Low RVP (7.8 psi) Gasoline (at refinery).
2. Stage I Vapor Recovery (at fueling stations).
3. Low Sulfur Gasoline by May 1, 2005 (at refinery).
4. Electric or propane-fueled forklifts.
5. Ozone Alert Program: encourage local participation i.e., Drive 55 mph, car pooling, etc.
6. Gas cap for vehicles giveaway.
7. Lower Speed Limit from 70 to 55 mph for Heavy Duty (18-wheel) Trucks during Ozone Season and increase enforcement.
8. Intelligent Transportation System (electronic signs on roadway provide real time info to drivers).
9. Use AHTD "enhancements" grants to link greenways/bikeways/bike racks/pedestrian walkways.
10. Truck idling emissions reduction through truckstop electrification.
11. Employer-provided Employee Transit Passes of up to \$65/month Tax Free De Minimis Fringe Benefit (Section 132 of IRS Code).
12. Employer-provided Commuter Highway Vehicle (Section 132 of IRS Code).